WHITE PAPER

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Title of Project: Sustainable Preservation of Collections and Architectural Assets
at Historic Huguenot Street

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NARRATIVE

Project Activities

In August 2016, Huguenot Historical Society (d.b.a. Historic Huguenot Street or HHS) was awarded a National Endowment for the Humanities Sustaining Cultural Heritage Collections planning grant in the amount of $49,170 for the project entitled "Sustainable Preservation of Collections and Architectural Assets at Historic Huguenot Street." The project consisted of an assessment of the environmental conditions at twelve structures containing over 14,000 artifacts and archival materials at the site, as well as a pilot project to act on recommendations that arose out of the assessment. The overarching goal of the project was to explore practical ways to improve environmental climate for both the historic houses and the collections, while exploring sustainable methods and reducing reliance on non-renewable energy.

Historic Huguenot Street is a 10-acre National Historic Landmark District encompassing seven stone houses with their origins in the 18th century where furniture and other items help tell the story of the French and Dutch families who made the region home starting in 1677, as well as the Native Americans who preceded them and the Africans they enslaved. The site also features a reproduction 1717 stone church that includes a basement storage vault for archives and several additional buildings that contain a library and collection storage areas, as well as office and programming spaces. Maintaining environmental conditions for optimal preservation of collections and the buildings in so many different types of structures has been challenging. While in the past staff had made efforts to improve monitoring and maintenance for the buildings, a comprehensive approach with professional advisement was needed to help further educate board and staff and ensure the site's historic assets are preserved for another 340 years.

Consultants' Site Visits

In the fall of 2015, Josephine Bloodgood, HHS Director of Curatorial and Preservation Affairs, contacted conservator Richard Kerschner and engineer/architect Michael C. Henry and asked them to submit proposals for the assessments that became the basis for the grant application to the NEH. Both consultants are respected for the pioneering work they've done in implementing sustainable environmental management and monitoring for museums. They've also collaborated on similar assessments and reports, including a project at Jefferson's *Monticello*.

Also that fall and winter, in anticipation of eventual grant funding, HHS invested in additional dataloggers (HOBO UX100-011) and a professional subscription to eClimate Notebook (an online tool allowing you to upload, save, and analyze climate data from the dataloggers) to ensure at least one full year's worth of data for each of the buildings to inform Kerschner's and Henry's understanding of existing conditions. Maintenance staff also made a list of heating and ventilation equipment in each building, including detailed location and operation instructions for shut-off valves and thermostats. The consultants were given an idea of types of collection materials housed in each space, including photos of each storage/display space on site. The Security/Facilities Manual was updated and floor plans were compiled, as well. These materials were prepared for reference by the consultants.

Upon notice of the grant award in August of 2016, Kerschner and Henry began reviewing numerous facilities reports, including Historic Structure Reports, engineering and conditions reports, and existing climate data. They made their first site visit to HHS in November of 2016. The visit lasted four days and included interviews with staff; walkthroughs of the historic houses, other buildings, and storage areas; review and analysis of environmental management data; and a meeting with staff and board to discuss

preliminary findings and recommend immediate steps that could help improve climate conditions in the houses and storage areas.

For each of the buildings, the consultants studied existing environmental management equipment arrangement and performance; examined building envelopes and the apparent thermal and moisture performances of each; evaluated potential moisture sources affecting the interior; assessed condition and environmental vulnerabilities of the collections; and compared monitoring data to observations of the building envelopes, systems and collections. Particular attention was paid to ways to utilize passive measures to improve envelope performance to reduce moisture infiltration and to allow proper ventilation in each building. Once implemented, these measures help heating and ventilation systems run less frequently and work more efficiently.

After the first site visit, consultants spent the next few months analyzing the collected data and drafting their reports. During this time, Kerschner and Henry were available by email and phone to support staff in environmental monitoring and management. Several quick fixes were recommended and implemented to improve climate conditions in the houses (see specific examples under Accomplishments).

A second visit by the consultants to present reports took place in May 2017. Consultants met first with the Director of Curatorial and Preservation Affairs (DCPA) and the then Executive Director to discuss the project and findings. Then a day-long follow-up workshop was held involving all Curatorial and Maintenance staff, along with select Board members and the Executive Director. Development staff also attended the meeting. During this workshop, the group discussed priority needs, as well as uses and potential uses of buildings throughout the site. Information drawn from the discussions was incorporated into separate reports coordinated by the consultants that were finalized over the summer and distributed to staff and board members for review.

Those participating in the walk-throughs and meetings with consultants included all Curatorial and Maintenance staff, as well as members of the Board of Trustees and Collection and Historic Preservation Committees. Staff participants consisted of the Collections Manager, Archivist/Librarian, Collections Care Assistant/Historic Housekeeper, Site Supervisor, and the Maintenance/Security Assistant, as well as the DCPA and Executive Director. Board and committee members included the Board President, Chairs of the Collection and the Historic Preservation Committees, Board Treasurer, and a collections volunteer. Development staff took part in the follow-up workshop in May.

The initial stages of the project stayed on schedule for the most part, with only a minor delay in the scheduling of the second visit due to opening of the houses for tour season and the consultants' availability. A more significant setback to the project was the resignation of the Executive Director in July. This meant that the final stages of the project—development of a long-range preservation plan and implementation of the pilot project—were impeded. As a result, HHS requested a one-year extension to take advantage of the full two years permitted by the SCHC planning grant. The pilot project was completed in September 2018.

Consultant Recommendations

As a conservator, Kerschner focused his report primarily on condition of the collection and the direct effects of the buildings' climates on the artifacts. The report (sent as part of the Interim Performance Report on October 31, 2017) includes a section on "Collections Sensitivity to Relative Humidity Extremes and Fluctuations" and a discussion of how wooden artifacts that have been in historic structures with little or no environmental control for many years have been "proofed" by extreme conditions and, therefore, are not as susceptible to damage from fluctuations in temperature and humidity. In general, he

found the condition of the artifacts to be good with little evidence of significant damaging effects from the building conditions, but stated there was room for improvement. Kerschner's report also recommended consolidating storage areas (storage for object collections not on display is spread over several buildings); deaccessioning objects not appropriate or significant to the collection; utilizing an attic space for storage of inorganic materials, such as glass, ceramics, and metals that are not adversely affected by high temperatures; and installing aspirating smoke detectors and water mist fire suppressions systems. Kerschner's report also recommends and provides helpful suggestions for the development of a Long-Range Preservation Plan.

Henry's report (sent as part of the Interim Performance Report on October 31, 2017) focuses on the buildings, including the seven historic house museums with origins in the 18th century, as well as the stone church (1972) and Deyo Hall (1920s), which also serve as HHS's main collection storage areas. The report discusses site context in relation to the Federal Emergency Management Administration (FEMA) Special Flood Hazard areas and the USDA Web Soil Survey; exterior climate; existing and proposed uses of each building; and a review of existing interior environmental management systems (heating and dehumidification units). There is a helpful section on building comportment that explains the importance of minimizing infiltration and exfiltration of air and moisture or "stack effect." Henry divides HHS buildings into three categories of comportment: compact early buildings, two-story buildings with open stair halls, and 20th-century buildings with conditioning. He goes on to discuss existing and potential environmental performance of the buildings based on classifications from the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE, also introduced in Kerschner's report) and outlines "reasonably achievable" Classes of Control for each of the HHS buildings based on existing conditions and uses. For example, Henry classified the Jean Hasbrouck House (ca. 1721)—a compact early building with stone masonry walls and tall, timber-frame roof—as a C- structure with the targeted potential to increase the Class of Control to C+ or B, if recommendations in the report are implemented.

Both consultants recommended passive measures like ensuring water is directed away from the buildings (effective use of gutters and surface/storm water drainage); closing gaps and tightening the envelope of the buildings to reduce stack effect; and minimizing light damage by completely blocking windows with room darkening shades or rigid insulation panels when closed for the season. For the additional $10,000 pilot project funded by the NEH, the consultants recommended practical environmental improvements to the Bevier-Elting House (ca. 1700-1760).

Both Kerschner and Henry recommended implementing humidistatically-controlled heating to reduce high relative humidity (RH) during the spring and fall, and to prevent relative humidity from falling too low during the winter. Heating buildings in winter can result in RH levels less than 35% that are damaging to collections. By keeping buildings that are only occasionally visited during the winter cooler, RH levels will rise to a safer level. With humidistats controlling the heat source in cooler months, heat can be activated to warm the room based on an RH set point (55%). As heat warms the room, it reduces the RH levels, as well. Since the heat is turned off when the RH drops below the set point, very low RH during cold weather is prevented, RH fluctuations are reduced, and collections are better preserved.

The sequence of operations to properly implement humidistatically-controlled heating is not complicated. Controls activate the heat whenever a humidity sensor indicates that the relative humidity exceeds the high humidity set point (55-60%). The controls also establish maximum and minimum temperature set points to prevent the building from overheating or to ensure that water pipes in buildings do not freeze. However, a modern digital control system serving all the buildings is required for the most accurate and effective humidistatic control.

Until centralized digital control for all the buildings is implemented (requiring WIFI or Ethernet cable communications throughout the site), Henry recommended implementing a more basic level of humidistatically-controlled heating by simply programming thermostats to reset temperatures the first of each month to maintain relatively safe humidity levels in the collection buildings. The monthly temperature set point calculations are based on average temperature and humidity levels measured in the collection buildings over the past several years. Henry presents monthly temperature set points, along with monthly set points for dehumidifiers, in a table on page 19 of his report.

Humidistatically-controlled heating is significantly more energy efficient than heating and humidifying a building to maintain safe RH levels in the winter, and much safer for historic structures. This method has proven very effective in controlling humidity for many historic buildings with limited winter visitation that house significant collections.

After discussions with staff and board and assessing the comportment and structure of the various buildings and needs for collection storage, Henry and Kerschner recommended HHS consider retrofitting the large meeting room in Deyo Hall into permanent collection storage. The space has several benefits as a storage room: the space is on ground level allowing easy access and has a concrete slab floor that can support metal shelving and compact storage units, the building can be well sealed and insulated, and heating and cooling systems could be easily and inexpensively installed. The second-story of Deyo Hall already serves as the main collection storage area, so repurposing the meeting room would help consolidate storage currently housed throughout the site. Retrofitting an existing building for collection storage also makes the project a candidate for an NEH implementation or IMLS storage improvement grant.

Kerschner's report recommended the creation of a Long-Range Preservation Plan (LRPP) that identifies and helps prioritize conservation and preservation actions for HHS's buildings and collections. The plan includes an Environmental Management Plan (EMP)—as outlined in the original grant proposal—that focuses on ways to improve and maintain appropriate climate in the houses and collection storage areas, while reducing non-renewable energy consumption and expenses. The LRPP and the EMP are working documents that will be reviewed and updated regularly by Curatorial and Preservation staff to ensure projects are completed as near to schedule as possible. Projects completed will be included as an appendix to the plan and help ensure a clear record of preservation efforts throughout the site. They will be discussed and reviewed annually with the Executive Director, and serve to inform both annual planning and budgeting, as well as master site planning, long-range strategic planning, and fundraising for years to come.

Accomplishments

The main objective of the planning project consisted of the comprehensive review of historic structures containing collections by the team of Kerschner and Henry, each with significant expertise in collection preservation and environmental management. Their assessments resulted in the Environmental Improvement Reports. The project met immediate, near-term, and cumulative objectives set in the proposal and in keeping with NEH goals. These included evaluating environmental parameters for collections and establishing realistic and achievable targets; examining passive and low-energy alternatives; and analyzing and making recommendations to optimize existing climate control systems to enable improved operation, effectiveness, and energy efficiency.

The immediate outcome of the project was staff and board education regarding passive and sustainable methods through meetings and discussions with the consultants during visits and via phone and email over the last two years. Both Kerschner and Henry engaged easily with staff and board, whether one-on-one or through the participatory workshops, sharing information, asking and answering questions, and encouraging discussion. Both consultants were sensitive to the demands on the small staff, limited budgets, and the complexities of a large, multi-structure site such as HHS. They were extremely appreciative of the unique historic significance of HHS's seven stone houses and collections and their recommendations reflected a commitment to preserving the character of these important cultural assets. Discussions not only helped to educate staff and board in greater depth on specific climate factors and their impact on the houses and collections, they also enhanced understanding of sustainable preservation strategies that balance effectiveness, cost, and environmental impact.

A significant point of learning for staff was the concept of stack effect and the importance and benefits of reducing infiltration and exfiltration. The staff learned how reducing stack effect would not only reduce heating and dehumidification costs, it would also improve the stability of interior RH levels and help prevent particulates, insects, and gaseous pollutants from entering the building. Stack effect is of particular concern in HHS's early compact buildings, where gaps in floorboards and around doors and windows, tall voluminous attics, open stairs~~,~~ and chimney flues are prevalent. While gaps around doors and windows are sealed in winter months when the site is closed for general tours, further measures to tighten the buildings are required to effectively reduce stack effect.

Another important point was greater understanding of how different types of collection materials (wood, metal, ceramic, textiles, etc.) have different climate requirements and that some materials are more forgiving than others. This allowed the staff to consider safely storing ceramics, glass, and other inorganic materials that can withstand high temperatures in an unconditioned attic space in the Deyo House, previously considered inhospitable to storing any type of collections. By improving and utilizing this space to store appropriate items safely, crowding in the main collections storage areas can be alleviated.

During and after the first visit, the consultants recommended a number of other simple projects that could be done to improve monitoring and management of climate conditions at minimal cost. These included adding seasonal insulation panels to reduce light exposure for collections and reduce heat loss, updating seasonal buildings and housekeeping procedures, capping chimneys that are no longer operational, and prioritizing deaccessioning and condensing collections when possible. Recommendations for improving monitoring included repositioning data loggers to specific locations, purchasing additional loggers (including exterior and soil moisture sensors and loggers), uploading data to eClimate Notebook at least monthly or more often in problem areas, and developing a written monitoring plan. Additionally, consultants ensured that staff learned to take advantage of all eClimate Notebook features, including how to generate detailed reports. Many of these recommendations have actually been completed or are being implemented as staff time and budget allows.

Remaining environmental management projects have been added to the Environmental Management Plan (see Appendices) created by the Director of Curatorial and Preservation Affairs. The plan's framework consists of an Excel spreadsheet with columns listing the name of the building or collection, specific projects, timeline, responsible party, estimated cost, and source of funding. The main tab of the spreadsheet lists projects yet to be completed. A second tab lists projects completed. The EMP also includes monitoring procedures, as well as daily, weekly, and seasonal guidelines for maintenance staff. The working plan was adopted by the HHS Board of Trustees at a meeting on December 13, 2018 and has already served as an important reference tool for planning activities and fundraising for the year ahead. The plan, along with the consultants' reports, will be indispensable in master planning for the site, helping

to prioritize and sequence the implementation of capital improvements to the envelope and systems of each of the buildings' physical improvements.

Pilot Project

For the additional $10,000 pilot project funded by the NEH, Henry and Kerschner recommended a series of practical environmental improvements to the Bevier-Elting House. The Bevier-Elting House is a one-and-half-story stone and masonry house built starting ca. 1700 with later additions in the 1730s and 60s. For several years, the house was closed to general tours and all collections pieces were removed due to ongoing moisture issues in the unheated building. The oldest house on the street, the Bevier-Elting House exemplifies the influence of Netherlandish architecture in the colonial Hudson Valley region, which was settled by the Dutch in the 17th century. For this reason, as well as the house's unique potential for interpreting the institution of slavery in the region, as well as the Revolutionary War, the Bevier-Elting House is central to HHS's mission to engage, educate, and challenge a diverse audience by collecting, preserving, and interpreting the buildings, objects, documents, and stories of the Huguenots' multicultural journey in America. Once restoration work to masonry, roof, and the interior is complete, the house will be incorporated into general tours.

After the consultant reports were finalized, HHS staff reviewed and prioritized the particular recommendations for the house with Henry and Kerschner by phone with follow up emails. Over the next year, the following recommendations were implemented with the support of NEH-implementation funds (see Appendices for supporting images):

- Conducted a baseline blower test prior to doing any work to identify air leaks. Repeated at the end of the project to enable comparison of results.
- Reduced vapor infiltration and stack effect by closing off the gaps in floors, around doors, between floors, etc. with strips of foam insulation (backer rod). Installed seasonal insulation panels in windows and unused exterior doors. Closed off chimney flue with insulation panels.
- Replaced inadequately sized and rotted gutters to help keep water away from the building.
- Hired a licensed electrician to make upgrades for the following equipment:
    - Installation of four portable oil-filled, electric space heaters, to be synchronized with a single digital thermometer.
    - Replaced malfunctioning dehumidifier with a new Santa Fe Impact XT unit in the cellar. Drained the unit to the exterior via a condensate pump, and added drain inspection to maintenance checklist.
    - Added Idylis dehumidifier (model # 0526011) to the east room on the main floor with a WILLHI WH1436H Digital Humidity Controller to ensure accurate humidity controls. Manual emptying added to the maintenance checklist.
    - Boosted WIFI to the building and purchased a Sense Home Energy monitoring unit.
    - Added two additional HOBO UX100-011 units to the interior of the house, one to the main floor and one to the west cellar.
    - Added a HOBO U23-001 exterior logger and Optic USB Base Station.

The $10,000 grant funding from the NEH covered most of the above expenses. However, to have wooden gutters custom-made in a style appropriate for this 18th-century house, alone, cost $9,960. Diverting water from the house with new, properly sized gutters was recognized as essential to the preservation of the house and HHS invested $5,670.32 of its own funds to complete the project. HHS also had a Santa Fe Ultra-Aire condensate pump on hand that was not currently in use and so was able to add it to the pilot project at no extra cost. More recently, HHS was granted funding from the New York State Council on

the Arts/ Greater Hudson Heritage Network Collection Needs Assessment Program to purchase a HOBO USB Micro Station Data Logger with temperature/relative humidity and soil moisture smart sensors to track said outdoor climate parameters. The unit was recommended by Michael Henry. As explained in his report, the interior environment of a building is the result of external thermal loads, such as sunlight, hot/cold air, and nighttime re-radiation cooling and external moisture loads, including atmospheric moisture, rainwater leaks, and evaporation of groundwater and soil moisture. If issues are to be correctly dealt with, they must first be correctly diagnosed. Moisture retention in soil evaporates into buildings and causes elevated relative humidity within, therefore soil moisture and outdoor temperature/RH data contribute to a comprehensive understanding of exterior versus interior environmental conditions.

The Sense Home Energy Monitor and accompanying app track energy usage over time and help identify sources of energy waste, thus aiding in sustainable environmental improvements for collections in historic houses. The data, including how often equipment turns on and cost per day/month/year, is viewed on a smart phone or laptop. Staff can compare usage of dehumidifiers and space heaters to monitoring results for temperature and RH to ensure best environmental conditions.

To date, the benefits of the pilot project to general climate conditions in the Bevier-Elting House are notable. The addition of space heaters adjusted to the monthly set points outlined by Michael Henry to the previously unheated house resulted in a marked improvement in RH during the winter months. For example, when comparing eClimate Notebook reports for RH in the west room of the house in January 2017 and January 2018, the mean RH for those months improved by nearly 40% (from 77% in 2017 to 38% in January 2018). RH levels for spring and fall showed improvement as well, and comparison of the two years overall showed risk for mold (MRF) had been lessened from a factor of 1.03 in 2017 to .06 in had been lessened from a factor of 1.03 in 2017 to .06 in 2018 (see Appendices for eClimate Notebook reports). In order to ensure that Henry's monthly set points are implemented correctly and on schedule for the appropriate houses, the adjustments have been added to the seasonal maintenance list and to internal calendars.

Blower tests conducted prior to and following measures taken to reduce infiltration helped to quantify the results of these efforts and showed that the airflow was reduced by 1500 CFM (or cubic feet per minute). The first test completed December 17, 2017 resulted in a blower door number of 6701 CFM50, while the second test completed September 26, 2018 resulted in a blower door number of 5200 CFM50 (see Appendices). However, because the house had previously been unheated, there was no cost savings from reducing infiltration in the house (via the installation of insulation panels in windows, filling gaps in floors and around doors, etc.). In fact, the electric bills for the house increased considerably. However, it is thoroughly understood that the previous conditions were unsafe for the house and that maintaining safe humidity levels is essential to its preservation, as well as any collections displayed there. The Sense Home Energy monitor should help HHS save money in the future by helping to identify energy waste.

Challenges

The consultants made a few additional recommendations for the Bevier-Elting House as part of the pilot project that could not be completed by the end of the grant period due to lack of available funds. These included:

- Ducting of the cellar dehumidifier to the main floor.
- Regrading on the south side of the house and trenching and installing perforated pipe and gravel around the perimeter of the house, which also would require archaeological testing of the area.

- Installation of a vapor barrier in the unfinished cellar areas (consultants stressed that vapor barriers should only be installed when all sources of soil moisture have been addressed).
- Upgrading interior lighting to LED lamps.

Additional sources of funding will be sought to implement these recommendations over time, as is the case with many other general recommendations made in the reports that would benefit the other houses. Replacing gutters and upgrading and ducting mechanical systems is needed, as is upgrading fire detection and installing fire suppression equipment. Restoring and refitting historic windows and doors, as well as storm windows (where they exist) would help reduce stack effect and entry of dust, insects, and vermin. Of high priority is a topographic survey and study of surface/storm water drainage of the areas surrounding the houses, which could be part of a Master Site Plan, which HHS hopes to commission in the next year. Once the recommendations of this study can be implemented and all sources of soil moisture are addressed, vapor retarders/barriers can be installed over earthen cellar floors.

Another challenge involves staff time and lack of site-wide WIFI or Ethernet cable connections. As it stands now, the climate monitoring system requires going to each building and downloading HOBO data to a laptop. This monthly process is time consuming on a 10-acre site with multiple buildings. Having Internet access and upgrading the data loggers to wireless units would save many hours over the course of a year and make it much easier for staff to monitor problem areas. Sense Home Energy Units could also be deployed throughout the site, providing important detailed energy consumption and waste information. Similarly, with the capabilities of centralized control for all the buildings, Henry's recommendations to adjust heating systems and dehumidifiers to monthly set points would be made significantly easier. As it stands now, these tasks are marked on internal calendars as reminders to staff, as well as in the seasonal maintenance procedures document.

Optimal storage for collections continues to be a challenge. Deaccessioning has been made a priority for 2019. Also, the recommendation to explore the conversion of the main floor of Deyo Hall to collection storage will be considered as part of a Master Site Plan. While use of the building for collections storage has many advantages, the large meeting room currently serves as HHS's main programming space for school groups, afterschool programs, lectures, and as an orientation point for large bus groups. Therefore, an alternative space or spaces for these activities must be found before conversion to storage can take place.

Audiences and Outreach

Award of the grant in December 2016 was shared through a press release, email announcements, on Facebook (with over 5000 followers), and in HHS's annual report and newsletter. Media coverage included write ups in area newspapers, helping to publicize the important preservation work HHS is doing, while promoting sustainable methods.

Because of its prominence as a National Historic Landmark District, HHS is well positioned to help inform other historic sites and museums in the region about preservation. In particular, thanks to the NEH SCHC planning grant, HHS can serve as a model for the implementation of sustainable, energy-efficient environmental strategies to preserve historic structures. Many smaller historical museums struggle to maintain safe environments in their buildings and collections. In response to this, HHS approached Greater Hudson Heritage Network (GHHN), a state-wide service organization, to hold a "behind-the-scenes" program for peer professionals from other institutions. The program was held in November 2017, after the consultant visits and as the pilot project was started. Space was limited to 20 guests, with

individuals traveling as far as two hours to attend the evening presentation held at the DuBois Fort Visitor Center. Attendees included professionals from a recently formed historic site, the Depuy Canal House, and well-established sites and museums like Boscobel House and Gardens, the Dorsky Museum at SUNY New Paltz, and Mabee Farm of the Schenectady County Historical Society, as examples. Other attendees included an art conservator, a historic researcher/genealogist, and an antiques dealer.

The program consisted of a PowerPoint presentation by Josephine Bloodgood, the Director of Curatorial and Preservation Affairs (see Appendices), followed by a walk-through and discussion of the pilot project at the Bevier-Elting House with staff including the Collections Manager and the Site Supervisor. Bloodgood's presentation provided an overview of the project, with an introduction to the NEH SCHC program goals, sustainable and passive methods, and project timeline and activities. It summarized the consultant reports' recommendations and introduced the pilot project being implemented at the Bevier-Elting House. During the presentation, the Collections Manager also introduced eClimate Notebook and discussed advantages of the online tool for recording and analyzing climate data. The presentation also broke down the NEH grant application process for colleagues, who are sometimes intimidated by federal grant applications. Next the group walked over to the Bevier-Elting House to discuss some of the issues in the house and the practical steps that were planned to improve climate management in the house with the NEH pilot project funds. A similar behind-the-scenes tour was given to HHS donors and members of the Historic Preservation Committee.

The immediate impact of this presentation included HHS staff following up with responses to a number of colleagues' questions relating to sources for monitoring and other monitoring equipment in the weeks and months after the presentation. More recently, HHS was asked to serve as the host for an all-day workshop on Risk Management by conservators from the Cultural Heritage Agency of the Netherlands. The workshop was organized and sponsored by Greater Hudson Heritage Network in partnership with the New York State Office of Parks, Recreation, and Historic Preservation. About 40 colleagues from regional historic sites and museums attended the program held in November 2018, which included a tour of HHS's Abraham Hasbrouck House and discussion of the climate monitoring and management measures implemented since receiving the NEH SCHC planning grant. This event, along with the 2017 behind-the-scenes presentation provided significant opportunities for HHS staff to share what they'd learned on the project with fellow professionals.

Continuation of the Project / Long-Term Impact

The NEH SCHC project will have significant and lasting impact on operations and planning for Historic Huguenot Street. The knowledge gained from working with Kerschner and Henry has been extremely valuable and the consultants' Environmental Improvement Reports continue to be an indispensable reference tool for staff. The benefits of implementing just the simplest of the recommendations are already apparent in the houses and collections (and supported by data), and HHS staff is committed to the improvement of environmental monitoring and management as an ongoing effort.

Implementing all of the consultants' recommendations will take several years, significant planning, and additional funding. Simple improvements like reducing infiltration and adding seasonal insulation panels in all the houses will continue with general operating funds budgeted by staff. Monitoring will be further enhanced with added loggers and upgrading eClimate Notebook in 2019 to accommodate these. Deaccessioning, recommended by the consultants to alleviate storage demands, has been made a top priority for the coming year. The measures taken and lessons learned from the pilot project at the Bevier-Elting House can be applied to other early, compact houses as funding allows. The Abraham Hasbrouck

House and the Jean Hasbrouck Houses, in particular, are both supported by endowment funds held by the Hasbrouck Family Association. HHS staff is working on a proposal to the Hasbrouck Family requesting support for several of the pilot project measures in these houses, including new gutters, WIFI boosting, additional monitoring equipment, and upgrades to heating and dehumidification units.

Key tools for long-term planning for HHS, the Long-Range Preservation Plan and the Environmental Management Plan and Procedures, will continue to be updated, help prioritize projects, and inform fundraising for the museum. They will serve as keystone documents in developing a Master Site Plan and support plans in the works for an Endowment Campaign and Capital Campaign to build a new visitor center and programming spaces in the coming years. The Master Site Plan will prioritize plans for improved permanent collection storage for objects, archives, and library, as well. Further studies for the conversion of the first floor meeting room of Deyo Hall to appropriate collection storage, plus improvements to the upstairs storage area already in use, will be conducted. A development plan will outline fund sources and deadlines, establishing a timeline to include applying for a second NEH Sustaining Cultural Heritage Collections grant for the purposes of implementation in two to three years.